

**Windows®. Life without Walls™.**  
**Fujitsu recommends Windows 7.**

# DATASHEET

## FUJITSU ESPRIMO P5645 E-STAR 5.0 DESKTOP PC

### YOUR EXPANDABLE WORKHORSE

#### ESPRIMO P5645 E-STAR 5.0

The ESPRIMO P5645 E-Star 5 is equipped with the latest AMD technology and offers extraordinary performance. With the powerful six-core processor from AMD this system reaches new performance levels enabling fast and easy handling of challenging tasks. The ESPRIMO P5645 E85+ offers optimal expandability due to its microtower design. This system, also equipped with an 87% efficient power supply, is very energy-efficient and meets the requirements of the new ENERGY STAR® 5.0 certificate. Reduce your costs by reducing your power consumption.

#### MICROTOWER

Maximum performance and optimal extendability

- Top-quality, high-value microtower, 6 drive bays, 4 PCI/PCI express interfaces

#### NEW PERFORMANCE HIGH

Fast and easy handling of challenging tasks at maximum performance

- High-quality six-core processor with Turbo Core technology

#### ENERGY STAR® 5.0

Low power consumption and low costs, without any loss in performance

- Power supply with up to 87% efficiency and enhanced power management settings

#### SILENT OPERATION

Pleasant working environment due to an extremely quiet system

- Innovative hardware design, optimized cooling concept

#### SERVICEABILITY

Easy to extend and optimal user-friendliness without any additional tools

- Easy access to all replaceable and expandable components



# COMPONENTS

<b>PROCESSOR</b>	AMD Phenom™ II X6 1035T (6 Cores, 2.6 GHz, 9 MB)
	AMD Phenom™ II X4 945 (4 Cores, 3.0 GHz, 8 MB)
	AMD Phenom™ II X2 550 (2 Cores, 3.1 GHz, 7 MB)
	AMD Athlon™ II X2 255 (2 Cores, 3.1 GHz, 2 MB)
	AMD Athlon™ II X2 220 (2 Cores, 2.8 GHz, 1 MB)
<b>OPERATING SYSTEM</b>	
<b>Operating system optional preinstalled</b>	Genuine Windows® 7 Home Basic (EM) 32-bit Genuine Windows® 7 Home Premium Genuine Windows® 7 Professional
<b>Operating system compatible</b>	openSUSE Linux Genuine Windows Vista®
<b>Operating system notes</b>	Dependent on configuration Windows 7® versions are: Microsoft Office 2007 ready Microsoft Office 2010 preloaded. Purchase a Product Key to activate a full Microsoft Office 2010 suite.
<b>MEMORY MODULES</b>	2 GB (1 module(s) 2 GB) DDR3, unbuffered, non-ECC, 1333 MHz, PC3-10600, DIMM
	4 GB (1 module(s) 4 GB) DDR3, unbuffered, non-ECC, 1333 MHz, PC3-10600, DIMM
<b>HARD DISK DRIVES (INTERNAL)</b>	SSD SATA, 128 GB, 2.5-inch
	SATA II, 7200 rpm, 1000 GB, 3.5-inch, S.M.A.R.T.
	SATA II, 7200 rpm, 500 GB, 3.5-inch, S.M.A.R.T. business critical
	SATA II, 7200 rpm, 500 GB, 3.5-inch, S.M.A.R.T.
	SATA II, 7200 rpm, 320 GB, 3.5-inch, S.M.A.R.T.
	SATA II, 7200 rpm, 250 GB, 3.5-inch, S.M.A.R.T.
	SATA II, 7200 rpm, 160 GB, 2.5-inch, S.M.A.R.T.
<b>Hard disk notes</b>	Supporting NCQ and 3 GBit
<b>GRAPHICS ADD ON CARDS (OPTIONAL)</b>	ATI Radeon® HD 5450, 512 MB
	DP to DVI-D (single link) Adapter Cable
	NVIDIA® GeForce® 9300GE, 512 MB
	NVIDIA® GeForce® 9300GE display port low profile, 512 MB
	NVIDIA® Quadro® NVS 290, 256 MB
<b>DRIVES (OPTIONAL)</b>	Blu-ray Disc™ Triple Writer
	DVD-ROM
	DVD Super Multi
	MultiCard Reader 20in1, 3.5-Inch
<b>INTERFACE ADD ON CARDS/COMPONENTS (OPTIONAL)</b>	
	Parallel Interface
	eSATA Interface
<b>Base unit</b>	ESPRIMO P5645 E-Star5
<b>MAINBOARD</b>	
<b>Mainboard type</b>	D2981
<b>Formfactor</b>	µBTX
<b>Chipset</b>	AMD 785G
<b>Processor socket</b>	AM3
<b>Processor quantity maximum</b>	1
<b>System bus (FSB / HT / QPI)</b>	up to 4000 MHz
<b>Memory slots</b>	4 DIMM (DDR3)
<b>Supported capacity RAM (max.)</b>	16 GB
<b>Memory frequency</b>	1333 MHz

**MAINBOARD**

<b>Memory notes</b>	Dual channel support. For dual channel performance, identical memory modules in each channel are necessary (minimum 2 modules).
<b>LAN</b>	10/100/1000 MBit/s Broadcom BCM57780
<b>BIOS version</b>	Phoenix 6.0
<b>BIOS features</b>	BIOS Flash EPROM update by software Recovery BIOS
<b>Audio codec</b>	Realtek ALC663
<b>Audio features</b>	Internal speaker supports audio playback, High Definition audio

**I/O CONTROLLER ON BOARD**

<b>Serial ATA total</b>	4
<b>thereof eSATA</b>	1 (optional)
<b>Controller functions</b>	Serial ATA II NCQ and 3 GBit AHCI Raid 1/0

**INTERFACES**

<b>Audio: line-in</b>	1
<b>Audio: line-in / microphone</b>	1
<b>Audio: line-out</b>	1
<b>Front audio: microphone</b>	1
<b>Front audio: headphone</b>	1
<b>USB 2.0 total</b>	12
<b>USB front</b>	2
<b>USB rear</b>	6
<b>USB internal</b>	4
<b>VGA</b>	1 (via DVI to VGA adaptor; included for onboard graphics only)
<b>DisplayPort</b>	1
<b>DVI</b>	1 (Dual link DVI-I)
<b>Serial (RS-232)</b>	1 (9pin, 16 byte FIFO, 16550 compatible)
<b>Mouse / Keyboard (PS/2)</b>	2
<b>Ethernet (RJ-45)</b>	1
<b>Parallel</b>	1 (optional) (25pin with EPP and ECP)
<b>Interface Module notes</b>	Anytime USB charge functionality

**INPUT DEVICE / COMPONENTS**

	Optical USB tilt wheel mouse
<b>Input devices (optional)</b>	Optical USB/PS2 tilt wheel mouse

**DRIVE BAYS**

<b>Drive bays total</b>	6
<b>3.5-inch internal bays</b>	2
<b>3.5-inch external bays</b>	2
<b>5.25-inch external bays</b>	2

**SLOTS**

<b>PCI-Express 2.0 x16</b>	1 x (230 mm) FlexySlot
<b>PCI-Express 2.0 x4 (mech. x16)</b>	1 x (230 mm) full height
<b>PCI (32-bit / 33 MHz)</b>	2 x (170 / 315 mm) full height

**GRAPHICS ON BOARD**

<b>Graphics brand name</b>	ATI Radeon® HD 4200
<b>Shared video memory</b>	up to 2811 MB
<b>Refresh rate 1024 x 768 (recommended / max.)</b>	85 Hz / -
<b>Refresh rate 1280 x 1024 (recommended / max.)</b>	85 Hz / -

**GRAPHICS ON BOARD**

<b>Refresh rate 1600 x 1200 (recommended / max.)</b>	85 Hz / -
<b>TFT resolution (VGA)</b>	1360 x 768 pixel 1440 x 900 pixel 1600 x 900 pixel 1680 x 1050 pixel 1920 x 1080 pixel 1920 x 1200 pixel
<b>TFT resolution (DVI)</b>	1360 x 768 pixel 1440 x 900 pixel 1600 x 900 pixel 1680 x 1050 pixel 1920 x 1080 pixel 1920 x 1200 pixel 2560 x 1440 pixel 2560 x 1600 pixel
<b>TFT resolution (DisplayPort)</b>	1360 x 768 pixel 1440 x 900 pixel 1600 x 900 pixel 1680 x 1050 pixel 1920 x 1080 pixel 1920 x 1200 pixel 2560 x 1440 pixel 2560 x 1600 pixel
<b>Graphics features</b>	DirectX 10.1 HDCP support OpenGL® 2.0
<b>Graphics notes</b>	up to 512 MB dedicated video memory (main memory owned and locked for graphics use) Tested resolutions, depending on display type additional resolutions and frequencies possible Shared memory depending on main memory size and operating system Resolution (color depth up to 32 Bit/pixel) For TFT we recommend using 60Hz

**ELECTRICAL VALUES**

<b>Power efficiency note</b>	power supply efficiency (at 230V; 20% / 50% / 100% load) : 85% / 87% / 85%) 0-Watt mode with hard-off switch
<b>Rated voltage range</b>	100 - 240 V
<b>Rated frequency range</b>	50 - 60 Hz
<b>Operating voltage range</b>	90 - 264 V
<b>Operating line frequency range</b>	47 - 63 Hz
<b>Max. output of single power supply</b>	300 W
<b>Power factor correction/active power</b>	active
<b>Monitor outlet</b>	No

**POWER CONSUMPTION**

<b>Power consumption note</b>	See white paper Energy Consumption
<b>Link to Energy White Paper</b>	<a href="http://docs.ts.fujitsu.com/dl.aspx?id=03379136-b9f6-4001-9a0d-319eb452db6a">http://docs.ts.fujitsu.com/dl.aspx?id=03379136-b9f6-4001-9a0d-319eb452db6a</a>

**HEAT DISSIPATION**

<b>Heat dissipation notes</b>	See white paper Energy Consumption
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**NOISE FOR STANDARD CONFIGURATION (HDD, ODD, FDD)**

<b>Noise emission</b>	According to ISO9296
<b>Related Processors for noise</b>	AMD® Phenom™ II X4 945
<b>Noise Operation mode 1: ODD load (Blue angel requirement)</b>	4.4B / 29 dB(A)
<b>Noise Operation mode 2: HDD load (Blue angel requirement)</b>	3.8B / 22 dB(A)
<b>Noise Operation mode 3: CPU 90% load (Blue angel requirement)</b>	3.8B / 24 dB(A)
<b>Noise Operation mode 4: High load</b>	4.0B / 24 dB(A)

**NOISE FOR STANDARD CONFIGURATION (HDD, ODD, FDD)**

<b>Noise Operation mode 5: Office applications</b>	3.7B / 22 dB(A)
<b>Idle mode (Blue Angel requirement)</b>	3.7B / 21 dB(A)
<b>Noise notes / description</b>	A weighted sound power level L <sub>wad</sub> (in B) / workplace related A-weighted sound pressure level L <sub>pAm</sub> (in dB(A)), Bystander position

**DIMENSIONS / WEIGHT / ENVIRONMENTAL**

<b>Dimensions (W x D x H)</b>	203 x 390 x 392 mm
<b>Operating position</b>	Vertical
<b>Weight</b>	approx. 12 kg
<b>Weight notes</b>	Actual weight may vary depending on configuration
<b>Operating ambient temperature</b>	10 - 35°C

**COMPLIANCE**

<b>Product</b>	ESPRIMO P5645
<b>Model</b>	MI3W-D2981
<b>Germany</b>	Blauer Engel / Blue Angel GS optional
<b>Europe</b>	CE Nordic Swan in progress
<b>USA/Canada</b>	FCC Class B cCSAus
<b>Global</b>	RoHS (Restriction of hazardous substances) WEEE (Waste electrical and electronic equipment) Microsoft Operating Systems (HCT / HCL entry / WHQL) ENERGY STAR® 5.0 EPEAT® Silver
<b>Compliance link</b>	<a href="https://sp.ts.fujitsu.com/sites/certificates/default.aspx">https://sp.ts.fujitsu.com/sites/certificates/default.aspx</a>

**ADDITIONAL SOFTWARE**

<b>Additional software (preinstalled)</b>	Nero Essentials S (burning software)
<b>Additional software (optional)</b>	Recovery DVD for Windows® Drivers & Utilities DVD (DUDVD) CyberLink Power2Go BD (playback software for Blu-ray Disc™, only with Blu-ray Disc™ drive / Blu-ray playback is not supported under Windows XP if the system runs on Intel onboard graphics) Nero 9 Essentials XL

**MISCELLANEOUS**

	Keyboard on (Special Fujitsu keyboard required) Thermal management
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**COMPATIBILITY (REFERENCES)**

	DMI 2.0 PC 2001 WMI 1.5 USB 2.0 SMBIOS
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**MANAGEABILITY**

<b>Manageability features</b>	DeskUpdate Driver management PXE 2.1 Boot code Wake up from S5 (off mode) Intrusion switch (optional) DASH 1.1 Support (optional)
<b>Manageability type</b>	DeskView 10.x client management including:

**MANAGEABILITY**

<b>DeskView features</b>	On/Offline remote client management Detailed system inventory management and reports BIOS Management Remote power management System notifications Advanced alerts (ASF implementation) Security Remote Control DeskView Helpdesk Integration WoL (Wake on LAN)
<b>Manageability link</b>	<a href="http://ts.fujitsu.com/manageability">http://ts.fujitsu.com/manageability</a> <a href="http://www.altiris.com/fujitsu">http://www.altiris.com/fujitsu</a>

**SECURITY**

<b>Physical security</b>	Kensington Lock support Eye for padlock Optional: Integrated cabinet lock
<b>System security</b>	Boot sector virus protection Write protect option for the Flash EPROM Embedded security (TPM 1.2) Control of all USB interfaces External USB ports can be disabled separately Control of external interfaces
<b>User security</b>	User and supervisor BIOS password SystemLock 2 BIOS SmartCard Security Hard disk password Optional: Access protection via external SmartCard reader Optional: Access protection via internal SmartCard reader

**SERVICEABILITY**

FlexySlot  
EasyFix  
EasyChange for HDD  
EasyChange for optical drives

**PACKAGING INFORMATION**

<b>Packaging dimension</b>	500x290x540 mm
<b>Max. quantity / pallet</b>	24
<b>Material - Weight (g) Carton</b>	1270 g
<b>Material - Weight (g) EPS / PS</b>	230 g
<b>Material - Weight (g) PE</b>	appr. 60 g
<b>Packaging notes</b>	printed user documentation is bleached in chlorine free process

**WARRANTY**

<b>Standard Warranty</b>	1 year
<b>Service level</b>	Bring-In / On-Site Service (depending on country)

**MAINTENANCE AND SUPPORT SERVICES - THE PERFECT EXTENSION**

<b>Recommended Service</b>	5x9, Response Time: Next Business Day
<b>Spare Parts availability</b>	5 years
<b>Service Weblink</b>	<a href="http://ts.fujitsu.com/Supportservice">http://ts.fujitsu.com/Supportservice</a>



**FUJITSU PLATFORM SOLUTIONS**

In addition to Fujitsu ESPRIMO P5645 E-Star 5.0, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

**Dynamic Infrastructures**

With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure as-a-Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

**Computing Products**

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**MORE INFORMATION**

Learn more about Fujitsu ESPRIMO P5645 E-Star 5.0, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.  
<http://ts.fujitsu.com/ESPRIMO>

**FUJITSU GREEN POLICY INNOVATION**

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at <http://www.fujitsu.com/global/about/environment/>

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